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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

REPORT COVERING BLACK HILLS BEETLE INFESTATION MEDICINE BOW NATIONAL FOREST

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REPORT COVERING BLACK HILLS BEETLE INFESTATION
MEDICINE BOW NATIONAL FOREST

The character of the Black Hills beetle infestation in the Medicine Bow National Forest, as observed from an examination of several areas on November 8 and 9, was given briefly in a report from Denver on the 10th. The present memorandum is a more complete discussion of the situation, including control.

At least five separate areas in the limber pine type on the main division of the Forest were reported as being infested. Three areas on the east side were examined in company with Junior Forester Miller and Ranger Hughes. These included the Libby and North Fork Creek drainage, north of Centennial, where the CCC camp had treated some 1,100 trees, completing about three fourths of the work in this area before the camp was moved; part of Centennial ridge on the north side of Middle Fork Creek, to the south of Centennial; and the somewhat isolated Sheep Mountain area to the east, where possibly a couple thousand trees are infested. The two areas in the northwest part of this division were not examined, one apparently resembling those covered; the other, where control had already been contemplated, was reported as containing some infested lodgepole pine along with the limber, and as recalled now was on Brush Creek. Nothing new had been reported at the time from the Hayden division, where control was conducted in 1932 on three areas, the two smaller areas being in lodgepole pine.

The present infestation is confined largely to limber pine and is scattered at different points over the high country in this type. Old

dead trees with beetle galleries still evident indicate that the Black Hills beetle was working in this type a number of years ago, but it is uncertain whether or not there is a direct connection between the old and the present infestation. It is apparent, however, that the present killing is much more serious than in the past and that there has been a marked increase in number of trees attacked in the last two years. The newly infested trees examined showed heavy attacks and an abundance of healthy beetle brood and no evidence that the infestation might decrease next year unless natural control factors interfere. In general, the infestation is similar to the mountain pine beetle epidemic in whitebark pine in northwestern Wyoming and Montana, where much of this type has been heavily infested in the last few years but with little evidence of a general spread to lodgepole pine thus far. Considering the widespread prevalence of epidemics in whitebark and limber pine in the northern Rockies, it is possible that even more spots of Black Hills beetle infestation might occur in the Medicine Bow and adjacent forests.

The question as to whether the beetle will in time spread generally into lodgepole is uncertain. On the areas examined it was showing a preference for limber pine, with the exception of a few lodgepole being attacked where the two species were mixed and also a few ponderosa pine infested on Sheep Mountain. The source of the two fairly heavy spots of lodgepole infestation treated on the Hayden division last year is indefinite. These limited epidemics may or may not have originated from limber pine a few years earlier, but it would seem that if they had been building up for a number of years there would be more evidence of earlier

infestation in or near these areas. It appears that there may be a danger of spread from the heavily infested limber pine. There is also a potential danger in areas where the scattered limber stand adjacent to lodgepole is about depleted, such as that examined on Centennial ridge. If the remainder of these trees are killed in the next year or two, which seems likely, the beetles will either be forced to enter lodgepole or attempt to migrate to other limber pine stands.

As to the advisability of control, it is apparent that the beetle has increased to an epidemic stage in the last few years and there is no evidence of it subsiding immediately. Although the type of timber being destroyed at present is of no commercial value, there is a possible danger of an epidemic starting in lodgepole. If this change of host species should occur gradually the resulting infestation might be more scattered and spotted than at present and more difficult to control. Such a spread would threaten the valuable commercial stands of the region; consequently, control now as a preventive measure would seem justified.

Therefore, it is recommended that the control work started this year be continued and an attempt made to treat all infested areas either this fall or next spring if possible.

Areas where lodgepole pine is being attacked to any extent and areas where the limber stands are already practically destroyed are probably the most threatening points. Sheep Mountain, which is six or seven miles from the main stands of timber to the west, is perhaps the least dangerous from the standpoint of beetle spread for the immediate

present even though a large number of trees are infested. There is enough limber pine to keep the beetles in this area for some time, and there is little commercial timber on this short range. However, if the epidemic continues until much of the susceptible timber is destroyed there will very likely be a migration of beetles, some of them doubtless reaching other parts of the forest.

In many of the infested trees examined the beetle larvae had already developed to nearly mature size. These larvae will pupate and transform to new adults rather early next season, possibly by late May and early June, although general emergence will not take place until several weeks later. Consequently, if late spring work is carried on, a continuation of the burning method should be used, since peeling after many new adults had developed would merely liberate many of these beetles. A few trees were found where the eggs had apparently not yet hatched, due to late attacks, and in such trees adults will not develop until much later next season.

It was reported that some infested Douglas fir had been found. This is undoubtedly the work of the Douglas fir beetle, Dendroctonus pseudotsugae, since this beetle is fairly specific on this host and there seem to be no records of the Black Hills beetle, D. ponderosae, attacking Douglas fir. Consequently, infested Douglas fir could be disregarded in control work. Engelmann spruce is sometimes attacked by the Black Hills beetle, especially adjacent to other attacked species; however, in isolated individuals or in spruce stands the infestation is more likely to be that of the Engelmann spruce beetle, D. engelmanni.

Approved: James G. Evenden

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Insect Control
Medicine Bow

Denver, Colorado
November 10, 1933

Inspection of Bark Beetle Infestation
in the Medicine Bow National Forest.

Briefly, the Black Hills beetle situation found during an examination on November 8 and 9 on Libby and North Fork Creeks, Centennial ridge (both sides of Middle Fork), and on Sheep Mountain was as follows:

On Libby and North Fork, control had already been under way from the local C.C.C. camp, approximately 1,100 trees having been treated before the camp moved out. It is reported that several hundred, possibly 300, infested trees remain on this same area still be be treated. A majority of the infested trees were limber pine with a small per cent of lodgepole - figures on the exact proportion of the two species not being obtained at the time.

On Centennial Ridge, the infestation is confined largely to limber pine - as far as observed in the area covered. On the south and southeast slopes above Middle Fork Creek, the timber stand is scattered and many of the trees have been killed in the last few years by this bark beetle. There is also evidence of bark beetle work in old dead trees which must have occurred many years ago but may not have a direct connection with the present infestation. The present infestation is continuing and many of the scattered remaining trees were attacked this year. It did not appear that there had been any great increase in infestation over last year. The south side of the Middle Fork was not covered, but it was reported that groups of infested trees had been found there also, in limber pine, and that the total number for Centennial Ridge was probably several hundred trees.

On Sheep Mountain, the high ridges at the north end only were covered since this area was supposed to contain the heavy part of the infestation. Here again, the main infestation was in limber pine. Several old, isolated ponderosa pine had also been killed by the beetle but of the small amount of lodgepole seen in the area none had apparently been attacked. Mistletoe was evidently the cause of death of many of the smaller sized limber pine and a combination of mistletoe and bark beetles had practically wiped out the stands in some of the pockets and small slopes. The beetle infestation on Sheep Mountain has also been in progress for the last two or three years at least and is

continuing with possibly some increase over last year. There apparently is little commercial timber on Sheep Mountain and this area is isolated by six or seven miles from the main stand of timber to the west. There is some question as to whether the beetle will spread into other areas while trees suitable for attack remain on Sheep Mountain, but it seems likely that infestation will remain as an isolated unit for some time or until the beetles become much more numerous than at present.

The first two areas mentioned above are adjacent to lodgepole stands, but it appears that much of the infestation is remaining in limber pine, although a few lodgepole trees have been attacked, and there is some possibility of more being infested if the epidemic should continue or get worse. Just how much of a threat the infestation in limber pine is to adjacent lodgepole is still somewhat uncertain.

The area on Cumberland Mountain, reported as having both lodgepole and limber pine infested, was not examined during the trip.

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CC Medicine Bow
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